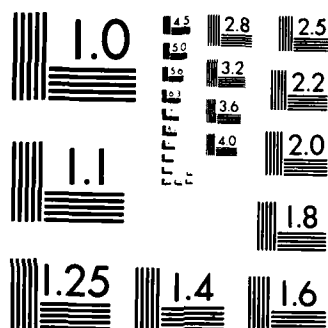


AD-A128 552 RECOVERY SYSTEM FOR BQM-34A/F RATO BOTTLE ATTACHMENT 1/1
HARDWARE QUALIFICATION OPERATIONAL TEST AND EVALUATION
(QOT&E)(U) TACTICAL AIR COMMAND LANGLEY AFB VA
UNCLASSIFIED 02 MAY 83 F/G 1/3 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS TACTICAL AIR COMMAND
LANGLEY AIR FORCE BASE, VA 23665

AD A 128552

2 May 1983

RECEIVED
MAY 25 1983

TAC PROJECT ORDER: Recovery System for BQM-34A/F RATO Bottle Attachment Hardware Qualification Operational Test and Evaluation (QOT&E)

PROJECT ORDER NUMBER: 83B-071A

TO: USAFADWC/CC

1. INTRODUCTION. The 325 FWW subscale target operations and maintenance (O&M) contractor submitted a Value Engineering Change Proposal (VECP), TSS 08-80, 9 Jun 80, for the recovery of the rocket-assisted-takeoff (RATO) bottle attachment hardware for BQM-34A/F subscale aerial targets. WR-ALC/MMYE ltr, 16 Jul 82, to 325 FWW/TED issued an AFR 57-4 Class II modification engineering approval to conduct test flights for a BQM-34F with an external fuel tank attached contingent that the numerous O&M practices, as outlined in this letter, are maintained.

2. DESCRIPTION.

a. Test Item Description.

This document has been approved for public release and its distribution is unlimited.

(1) The BQM-34A/F subscale targets are launched by use of a RATO attached to the lower aft portion of the airframe. Once airborne, the rocket motor and attaching components disengage from the target and are retrieved from the drop area after launch. As a result, 100% of the aft support assemblies and 25% of the forward support assemblies are damaged beyond repair due to ground impact.

(2) The RATO bottle attachment hardware can be recovered using a locally fabricated low cost parachute recovery system (GFE). This recovery system is designed around a 28-foot diameter personnel parachute canopy (FSN 1670-00-554-6413). The canopy is restricted to a seven-year service life for aircrew life support purposes and when the service life has expired, it is then available for non-life support purposes. The parachute will be enclosed in an asbestos-lined aluminum container to be attached to the upper center portion of the rocket motor assembly. A parachute deployment lanyard will be attached to the lower aft target airframe to facilitate deployment at rocket motor separation. The nylon parachute shroud lines will be attached to a block assembly which will then be attached to the rocket motor via a stainless steel cable at the aft support mounting point. This modification will result in a rocket motor descent in a nose down attitude rather than tumbling and will result in a soft landing on the lower section of the rocket motor. The recovery system can be reused indefinitely; consequently, it is anticipated that only eight BQM-34A and four BQM-34F systems will need to be fabricated.

(3) A substantial cost savings to the government may be realized of between \$508 to \$1295 for each BQM-34A launched, and between \$1739 to \$3151 for each BQM-34F launched.

Readiness is our Profession

DTIC FILE COPY

b. Test Description. The tests will be conducted in three phases:

(1) Phase I will demonstrate the feasibility of recovering the RATO attachment hardware on a BQM-34F with external fuel tank installed. Class II modification engineering authority has been granted by WR-ALC/MMYE for this configuration contingent upon the procedures outlined in the referenced WR-ALC/MMYE letter being followed. High-speed photography of the RATO attachment hardware recovery sequence should be accomplished.

(2) Phase II will be conducted once WR-ALC/MMYE has reviewed the high-speed photography available from Phase I, and issued AFR 57-4 Class II engineering modification authority to begin Phase II testing. In this phase, BQM-34F test sorties will be accomplished in the tank-off configuration IAW WR-ALC established constraints.

(3) Phase III will demonstrate the feasibility of recovering the RATO attachment hardware on a BQM-34A. This phase will only be conducted if Phase I and II objectives were successfully attained and WR-ALC/MMYE has determined that sufficient separation clearance exists between the recovery package and the ventral fin. WR-ALC/MMYE must issue Class II engineering modification authority prior to the initiation of Phase III testing.

All Phase I, II, and III testing will be accomplished on BQM-34A/F sorties being flown in support of missile firing exercises. No dedicated sorties will be required.

3. OBJECTIVES.

a. Purpose. The purpose of this test is to demonstrate the feasibility of recovering the RATO attachment hardware on BQM-34A/F subscale aerial targets.

b. Test Objectives. The following test objectives should be considered during this feasibility analysis:

(1) Assess the physical compatibility.

(2) Determine the capability to successfully recover the RATO attachment hardware without damage due to the recovery package and/or ground impact.

(3) Assess the adequacy of WR-ALC recommended technical order changes.

(4) Perform a limited logistics supportability evaluation.

(5) Identify safety hazards and design deficiencies. Suggest improvements which may improve the system design.

4. CONCEPT OF EMPLOYMENT. The recovery hardware for the RATO attachment hardware will be used on all BQM-34A and BQM-34F subscale aerial

7. TARGET DATES.

Initiation of Phase I testing	-	Jun 83
Completion of Phase I testing	-	Jun 83
Class II Mod Authority for Phase II testing	-	Jul 83
Initiation of Phase II testing	-	Jul 83
Completion of Phase II testing	-	Jul 83
Class II Mod Authority for Phase III testing	-	Aug 83
Initiation of Phase III testing	-	Aug 83
Completion of Phase III testing	-	Aug 83
End-of-Test Message Submitted	-	Sep 83

8. TEST REPORTS. An end-of-test message will indicate the date physical testing was completed. A final report will be submitted detailing test objectives, results, conclusions, and recommendations for HQ TAC approval.

9. PRIORITY. TAC Priority is 4.

10. AUTHORITY. TACR 55-10.

11. RESOURCES. 325 FWW/TE BQM-34A/F resources will be used. All sorties will be piggybacked on BQM-34 missions flown in support of missile firing exercises. Funding will be 12897F.

12. SAFETY. Mishap prevention is the responsibility of 475 TESTS. Mishaps will be investigated and reported IAW AFR 127-4, with assistance as required by 325 FWW/TE and USAFADWC/SEW. Personnel and equipment safety will take precedence over completion of any part of this test. During the conduct of this test, the project manager will be responsible for the overall safety. A detailed safety review will be conducted prior to the start of active flight evaluations. All potential hazards will be resolved to the satisfaction of the test participants prior to the start of testing. A certification of this review will be included in the permanent project case files.

13. RELEASE OF INFORMATION. News releases must be coordinated through the test project manager and released by the USAFADWC Public Affairs Office.

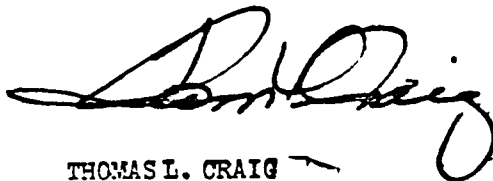
14. SECURITY. This test will not generate any classified data nor is the conduct of this test classified.

15. ENVIRONMENTAL IMPACT. The conduct of this evaluation will not have adverse effects on the environment since no events are planned which differ from normal missions conducted at the USAFADWC. AFR 19-1, as supplemented, will be complied with.

16. STATEMENT OF INVESTIGATION. The objectives of this project do not duplicate previous or current projects accomplished and documented by this or other governmental agencies.

17. DISTRIBUTION. See attached list.

FOR THE COMMANDER

A handwritten signature in dark ink, appearing to read 'Tom Craig', is written over the typed name.

THOMAS L. CRAIG
Brigadier General, USAF
DCS, Requirements

1 Atch
Distribution List

DISTRIBUTION LIST

	<u>No. of Copies</u>
HQ USAF/XOO, Washington DC 20330	1
HQ TAC, Langley AFB VA 23665	
DOO	1
LGM	1
XPF	1
DRP	1
DRA	5
ADTAC, Langley AFB VA 23665	
DOO	1
DRT	1
LGM	1
WR-ALC/MMY, Robins AFB GA 31098	1
AD, Eglin AFB FL 32542	
YMA	1
YMTT	1
YMEE	1
USAFTAWC, Eglin AFB FL 32542	
DOOT	1
TXMA	1
4484 FWS/TG	1
USAFADWC/HO, Tyndall AFB FL 32403	4
325 FWW, Tyndall AFB FL 32403	
CC	1
TE	1
TEO	1
TED	1
475 TESTS/CC	1
82 TATS/CC	1
AFOTEC/CC, Kirtland AFB NM 87117	1
AFOTEC/Det 2, Eglin AFB FL 32542	1
DTIC/TCA, Cameron Station, Alexandria VA 22314	2
Hayes International, Inc.	1
Target Division	
P. O. Box 707	
Leeds AL 35094	

END

FILMED

6-83

DTIC